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MINOS Far (BUD) Fan Chassis Machining and Wiring

1. Temporally screw a 2U front panel to a sst chassis and a BUD chassis.
2. Mark LED using front panel hole as a guide. Use proper size layout punch. In all cases, keep layout punch at 90 degrees.
2. Slide fan chassis into housing. Slide in the 2 side spacers (the side spacers should be flush with the front of the chassis) and the rear spacer. Install the 2 1 3/4" to properly support the rear of the Bud chassis. Using layout punch make all 6 holes.
3. Using the template mark the 4 holes for the TackScan.
4. Mark the hole for the grommet for the fan failure cable. It's located between the left most (facing front of chassis) row and the middle row (~5 ¾" from left edge), and ~ ¾" from the back edge of fan unit.
5. It may or may not be necessary to use hammer and re-punch marks. It was found that pre-drilling the marked spots with a small drill bit improved the accuracy of the position. At the drill press:
    - 5.1 Drill out the 4 holes for the TackScan using a #7 drill bit (.201) on all chassis
    - 5.2 Drill a 3/8" hole for the grommet.
    - 5.3 Set the drill press table for proper height and pre-drill the remaining 7 holes.
    - 5.4 Drill the 6 side and end holes using a #22 drill bit.
    - 5.5 Drill the hole for the LED using a 17/64" bit.
    - 5.6 De-burr the holes using a portable drill and a 25/64" drill bit.
6. Assembling the fan chassis:
   Take a red/green LED and clip the longest wire and solder a ~24 inch red ~ #22 AWG wire on it. Do the same with the shorter LED lead, using a black wire. Insulate both with shrink tubing. Ream out the LED mounting hole till a 25/64 drill bit will slide through. Install the LED and press on sealing ring (use tools provided if necessary).
    - 6.2 Install the 6 Comair-Roton fan into the fan pack—writing side up. Install them so that their 3 wires are closest to the TacScan board. Pull the fan wires up out of the way. This will insure that wires won't be pinched under a lock washer/nut or fan bodies. Tighten screws diagonally.
    - 6.3 Install the TackScan board with J1 closest to the fans. Install the support legs in the board first, using a long nose pliers to squeeze the leg into each hole, then snap the 4 supports into the chassis using something like a nut driver to push on. Use care. These supports are quite fragile. Prevent these tabs from being broken off .
    - 6.4 Wire the fans into J1 thru J9 of the TackScan9 board. Cut the individual fan wires to proper length. Strip off ~ 1/8 inch of the outer insulation. Use the proper crimping tool for the connector pins (a Molex 1.4 mm die works). Gently pull on the first crimp of a 2 crimp process per pin to make sure its tight enough. The red wire goes to the +, the black wire goes to the minus, and the blue wire goes to the center (A) position of the connector. Jumper the A position on the 3 unused connectors from one of the used positions.
    - 6.5 Wire in the LED into J13, putting the brown wire into the + "or" and the black wire into the minus "or".
    - 6.6 Cut a 4 ½ foot piece of Belden 82723 877 wire. Strip off about 3 inches ofthe outer covering on one end and clip the ground lead and foil. Strip off the insulation on the 2 wires. Clip off 3 or 4 strands of each wire (makes a better crimp) and crimp 2 of the round sockets onto the wire. The 1.6 mm slot on the Molex crimper seems to work better for this larger wire. Carefully insert the socket pins into the socket of the J11 mating connector putting the brown wire into the + and black into the negative. Make sure the pins have locked into the connector.
    - 6.7 Using a 2 foot piece of the Belden wire, strip off the insulation **peal back 3 or 4 strands of the wire and clip off.** Crimp the 2 pins onto the brown and black wires. Install the black wire into 1A of J12 and the brown wire into 2A of J12.
    - 6.8 Dress up the wiring, tying down the wires using cable ties. Secure the 2 Belden cables to a fan using a tie wrap.
    - 6.9 Using an ohm meter check to power cable reading. A positive to positive measurement should read about twice the ohmage as a reversed connection . If it doesn't, double check all of the wire inserts, especially the J1 connectors. Correct if necessary. Power the system using

a 24 volt PS. Make sure the brown wire goes to the + terminal. After a short time the LED should go green. Reducing the RPM on each fan should cause the LED to go red.

6.10 Secure the power and alarm cables so they won't get damaged

Assembling the BUD chassis into the Fan Housing

1. Install the 1 inch bottom spacer. Slide the BUD fan housing into the chassis. Slide in the other 2 1/2 inch spacers into the housing. Install the 6 screws and nuts---do not tighten.
2. Install the 2U front panel using 4 8 – 32 screws. Put nuts on the 2 BUD screws that are reachable. Tighten all screws and nuts.
3. Thread the BIRA lead from the TackScan J12 up through the rubber grommet, cut to length, peal off the outer white covering and ground wire/shielding, and strip ½ inch of the insulation off the 2 wires. Tin both wires and terminal block leads. Tin the leads and install the terminal block using 6 – 32 ¾ inch screws and nuts. Secure the label under the terminal block. Solder the wires from J12 of the TackScan to the terminal block (brown wire being the positive).
4. Run the power cable out the ½ inch chassis hole and secure with a strain relief. Strain relief may need modification.
5. Install 2 male Toy Car Molex connectors on the end of the power cable and insert into the Molex housing making sure the brown wire is in the left side of the connector when the fastener is facing away from you.
6. Power the fans and make sure all's well. The LED should be green. Stop on of the fans and the LED should go red.
7. With an engraving tool put a serial # on the rear of the chassis. The latest # as of 4/3/01 is 8.